

CODES OF PRACTICE

(AMENDED)

**(MINIMUM FIRE SERVICE INSTALLATIONS
AND EQUIPMENT)**

AND

**(INSPECTION AND TESTING OF INSTALLATIONS
AND EQUIPMENT)**

**FIRE SERVICES DEPARTMENT.
HONG KONG
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CODE OF PRACTICE

**(MINIMUM FIRE SERVICE INSTALLATIONS
AND EQUIPMENT)**

BUILDINGS ORDINANCE, CHAPTER 123

**CODE OF PRACTICE (MINIMUM FIRE SERVICE
INSTALLATIONS AND EQUIPMENT)**

PRELIMINARY NOTE

The Building Authority may, under section 16(1)(b) of the Buildings Ordinance, Cap. 123 refuse to approve any plans of building works where, *inter alia*, the plans are not endorsed with or accompanied by a certificate from the Director of Fire Services certifying either---

- (i) that, having regard to the purpose to which the building is intended to be put no fire service installation or equipment is necessary in connection with the building that will result from the carrying out of the building works shown on the plans; or
- (ii) that the plans have been examined and are approved by him as showing all such fire service installations and equipment as in his opinion, having regard to the purpose to which the building is intended to be put, comprise the minimum fire service installations and equipment necessary for the building in accordance with the Code of Practice published from time to time by the Director of Fire Services.

This Code of Practice (Minimum Fire Service Installations and Equipment) is accordingly published for general information and guidance only. It is not intended to lay down any hard and fast rules. Special factors or circumstances may arise in a particular case which necessitate, in the Director's opinion, the provision of fire service installations or equipment not indicated in this Code. Alternatively, other factors and circumstances may enable the Director to relax, in regard to a particular building, any of the requirements specified for that class or type of building, and consideration will be given to all representations made for relaxation in any particular case. Accordingly, this Code of Practice indicates only the general principles, considerations, factors and circumstances which are normally taken into account and acted upon by the Director of Fire Services in forming his opinion as to the minimum fire service installations and equipment necessary for certain types and classes of buildings.

CODE OF PRACTICE (MINIMUM FIRE SERVICE INSTALLATIONS
AND EQUIPMENT)

PART I

INTERPRETATION

Interpreta-
tion.

1. In this Code, unless the context otherwise requires—
- “downcoming main” means the pipe connecting the supply tank to a fixed fire pump at a lower level;
 - “drencher installation” means an arrangement of pipes and discharge heads so positioned that a curtain of water may be interposed between a fire and the property being protected;
 - “dry riser” means a vertical water main which is normally dry, of appropriate size, and fitted with hydrant outlets which can be charged with water by Fire Services Department pumps via a fire service inlet;
 - “fire alarm installation” means an installation capable of warning persons of an outbreak of fire, this may be either of the type which requires manual operation, or an automatic heat or smoke detection system;
 - “fire hydrant/hose reel installation” means an installation of pipes, water tanks, pumps, hydrant outlets and/or hose reels in a building to provide a ready means by which a jet of water can be delivered in any part of the building for the purposes of fire fighting;
 - “fixed fire pump” means a permanently primed pump set between the reserve source of water supply and the various hydrant/hose reel outlets;
 - “hose reel” means any standard type hose reel of a pattern approved by the Director of Fire Services;
 - “sprinkler installation” means an installation of water supplies, pump, pipes, valves and delivery points so arranged as to automatically and instantaneously detect a fire and attack it with water and sound an alarm;
 - “storey” has the meaning assigned to it by regulation 2 of the Building (Planning) Regulations, Cap. 123;
 - “sub-main” means either a dry or charged pipe connecting from the principal water main (either charged or dry) to a fire hydrant outlet;
 - “supply tank” means a water tank containing the specified quantity of water reserved solely for fire fighting;
 - “wet rising main” means any permanently charged vertical water main other than a down coming main for fire fighting within the boundaries of a building.

PART II

GENERAL REQUIREMENTS

2. At the discretion of the Director of Fire Services, one or more of the following eight installations may be required--
- Types of installations that may be required.
- (1) A fire hydrant/hose reel installation consisting of permanently charged pipes of suitable dimensions leading to one or more hydrant/hose reel points as approved by the Director of Fire Services, with each hydrant point fitted with a standard 70 mm Hong Kong Fire Service Round Thread male outlet or a standard 63.5 mm instantaneous outlet and each hose reel point consisting of smooth bore 19 mm internal diameter rubber tubing on a suitable drum permanently connected to the hydrant supply main adjacent to the hydrant. The system to be capable of continuous and uninterrupted use by keeping the system charged by F.S. pumps even after the supply of water in the water supply tanks has been exhausted.
 - (2) A "dry riser" to provide ready means, without recourse in the early stages of a fire to firemen running hose up staircase, to deliver a supply of water for fire fighting purposes to each floor.
 - (3) A "sprinkler" installation to automatically and instantaneously detect a fire, attack it with water from suitably placed points and sound an alarm.
 - (4) A "drencher" installation which provides a curtain of water for protection against internal and external "exposure" to fire, and/or the protection of large openings.
 - (5) A fire alarm installation to either automatically warn occupants of a building of an outbreak of fire in the building and locate by an annunciator board the place of the actuated alarm point or in the case of a manual alarm installation to provide a ready means whereby anyone discovering a fire can rapidly warn others in the building of an outbreak.
 - (6) Hand appliances and/or other preventive media which may be required by the Director of Fire Services.
 - (7) Fixed installation capable of either automatic or manual operation or both and designed so as to discharge an extinguishing media such as water, foam or dry powder or CO₂ etc. in any place for the purpose of extinguishing or preventing the spread of fire.
 - (8) One or more fixed pumps which shall preferably be electrically driven, and shall be permanently connected between the water supply and the hydrant/hose reel outlets, and shall be capable of remote starting.

Buildings and type of installations generally required therefore.

3. The type and extent of installation called for will depend on a number of variable factors which are too numerous for any simple scale to be laid down. The main factors, however, are occupancy, cubic content of rooms, floor areas and number of floors. The following indicate the type of installation that will generally be required for the buildings specified—

- (1) *Fire hydrant/hose reel installation.*
 - (a) Domestic buildings of more than 12 storeys or 30 m in height whichever is the lower.
 - (b) Any other building whether by virtue of height, volume, life risk, accessibility, availability of water supplies and nature of occupancy which in the opinion of the Director of Fire Services warrants the provision of such installation.
 - (c) Commercial buildings as required by the Director of Fire Services.
 - (d) Industrial buildings, single storey where the floor area exceeds 700 m².
 - (e) Industrial buildings of 2 storeys where the 1st floor area exceeds 460 m².
 - (f) Industrial buildings more than 2 storeys, irrespective of floor area factor.
 - (g) Restaurants, hotels or dance halls as required by the Director of Fire Services.
 - (h) Cinemas, theatres and other places of public entertainment and/or public assembly as required by the Director of Fire Services.
 - (i) Godowns and warehouses where a fire service installation is considered necessary by the Director of Fire Services and in any case all godowns and warehouses over 2 storeys in height, irrespective of floor area factor.
 - (j) Hospitals and clinics that are more than 2 storeys in height where the floor area of any storey exceeds 270 m².
 - (k) Hospitals and clinics over 4 storeys in height, irrespective of floor area factor.
 - (l) Schools.
- (2) *Dry riser installation.*
Domestic buildings of more than 6 storeys and under 13 storeys in height or 30 m whichever is the less.
- (3) *Sprinkler installation.*
 - (a) Bowling alleys, and dressing rooms, scenery docks, stages and stage basements of theatres.

- (b) Garages and car parks run as a commercial enterprise, in excess of 90 m². Those provided for the convenience of the occupants of the building, in excess of 460 m², except where para. 26 of the Code of Practice on Means of Escape in Case of Fire etc., applies [i.e. the differentiation between "car-port" and "garage"].
 - (c) Any room or other compartment of a building exceeding 7 000 m³.
 - (d) Department stores or shops that totally exceed 7 000 m³.
 - (e) Basements for storage (except strong rooms, safe deposit of banks) which exceed 460 m².
 - (f) All commercial buildings and the commercial portions of composite buildings of more than 30 m in height or more than 10 storeys, whichever is the less. The height of a building to be measured from street to main roof levels.
 - (g) All industrial buildings including godowns of more than 2 storeys in height, irrespective of floor area, unless the planned occupancy would prohibit the use of water as a fire-fighting media. In an industrial building required to be sprinklered, such sprinkler installation must be extended to cover all internal staircases and common areas forming part of required exit routes.
 - (h) In certain circumstances the provision of a sprinkler installation may be waived in favour of compartmentation, and/or the provision of an automatic heat or smoke detection fire alarm system.
- 3(A) "*Automatic Smoke and/or Heat Detection System*".
- (a) All commercial buildings not required to be sprinklered under sub-paragraph 3(3)(f), the commercial portions of composite buildings as considered necessary by the Director of Fire Services, industrial and godown buildings of two storeys or less in height as considered necessary by the Director of Fire Services.
 - (b) Hotel and Hospital Buildings in all areas not covered by sprinkler system.
(N.B. This may, in the case of smoke detection systems, be incorporated in the Air Conditioning System).
 - (c) Department stores and shops totally exceeding 2 800 m³ but less than 7 000 m³.
Any other building whether by virtue of height, volume, life risk, accessibility, availability of water supplies and nature of occupancy which in the opinion of the Director of Fire Services warrants the provision of such installation.

In (a) to (c) above the Director of Fire Services may require the detection system to be connected direct to the appropriate Fire Control at the clients' expense. Terminal facilities are available in Fire Controls.

- (4) *Drencher installation.*
 - (a) Theatre proscenium openings.
 - (b) High fire exposure risks.
- (5) *Fire alarm installation.*
 - (a) Buildings of over 6 storeys in height.
 - (b) Other buildings of high fire/life risks, e.g. hotels, schools, hospitals, office blocks, factories, etc.
- (6) *Hand appliances or other preventive media.*

Minimum Requirements.

Buckets (painted red).

Not less than 9 L capacity always filled with water.

Not less than three buckets for each 200 m² or part thereof of floor area but not less than six buckets on each floor.

Alternatives to the above in portions of premises containing only electrical apparatus or in which inflammable liquids or fats and greases are stored or used.

- (a) Buckets may be filled with dry sand instead of water.
- (b) In place of each bucket, either:
 - (i) 2 kg approved Dry Powder (Gas-expelled) extinguisher, or
 - (ii) An approved B.C.F. type of 1.3 kg capacity or Chlorobromomethane extinguisher of not less than 1 L (nominal) size. (where electrical apparatus only is involved) or
 - (iii) 3 kg approved Carbon Dioxide Extinguisher.
 - (iv) 4.5 L approved Foam Extinguisher.
- (c) In one or more approved Dry Powder (Gas-expelled) Extinguishers containing an aggregate amount of not less than 6 kg of dry powder, or in not less than two approved Carbon Dioxide Extinguishers containing an aggregate amount of not less than 9 kg of CO₂ may be allowed as equivalent to three buckets of water, or as equivalent to a 9 L extinguisher.

OR

Extinguishers.

Approved Portable Extinguishers having an aggregate capacity of 9 L for each 200 m² or part thereof of floor area but not less than 18 L on each floor.

The extinguishers provided for are those of the Water (Gas-expelled), or Foam types. Fire extinguishers of these types are not recommended for use on electrical apparatus. Where inflammable liquids or fats and greases are stored or used an approved Dry Powder (Gas-expelled) Extinguisher containing not less than 6 kg of dry powder may be allowed as equivalent to a 9 L Foam Extinguisher.

Note—Any combination of the various appliances referred to the above may be employed.

Fire Blankets

Whenever a fire blanket is required to be provided, the minimum size should be 1 200 mm × 1 200 mm.

(7) *Fixed installation.*

In any place containing a special or high fire risk as required by the Director of Fire Services.

4. There shall be sufficient hydrants and hose reels on each floor to ensure that every part of each floor can be reached by a length of not more than 30 m of Fire Services hose or hose reel tubing.

Number of hydrants & length of hose reels.

5. The minimum quantity of water required to be available, having regard to the floor area factor of the largest floor is as follows:

<i>Floor area (gross)</i>	<i>Water storage required</i>		Water requirements for fire hydrant/ hose reel installation.
Not exceeding 230 m ²	9 000 L	(9 m ³)	
Over 230 m ² but not exceeding 460 m ²	18 000 L	(18 m ³)	
Over 460 m ² but not exceeding 920 m ²	27 000 L	(27 m ³)	
Over 920 m ²	36 000 L	(36 m ³)	

6. The pressure and flow available for the fire hydrant/ hose reel system shall be such as to provide for a static pressure of not less than 400 kPa and not more than 700 kPa with a flow of not less than 1 350 L/min for industrial buildings and not less than 900 L/min for all other types of buildings from any hydrant outlet of the system. In all buildings where the height between the topmost hydrant and the lowest Fire Service Inlet is in

Water pressure for fire hydrant/ hose reel.

excess of 60 m, the flow and pressure, where necessary in the opinion of the Director of Fire Services, shall be maintained by booster pumps and/or water tanks inserted in the rising main system. The booster pump shall be capable to maintain the required flow and pressure at the topmost hydrant when water is pumping through the F.S. Inlet at a pressure of not more than 800 kPa.

Fireman's
lifts.

7. In every building of over 8 floors or 24 m in height in which a lift/s is/are installed, a fireman's lift/s shall be provided which shall satisfy the following conditions—

- (1) It shall be provided with a separate fire-resisting lift shaft.
- (2) Lift shaft openings shall be provided with automatic self-closing fire-resisting doors.
- (3) It shall be of a minimum size of 1.35 m² net internal floor area of car, with a minimum rated load of 680 kg.
- (4) It shall be provided with a suitable escape hatch.
- (5) Each point of discharge shall be into a smoke lobby or similar protected area.
- (6) It shall be provided with a suitable control switch at ground floor level to enable the Fire Services Department to gain immediate control over the lift and return it to ground level, such control gear isolating the lift from control by the public. Whilst under such control, all landing call points and control switches shall be rendered inoperative and sole control vested in the car control station, ensuring that any collective control becomes inoperative. No service switch shall override the fire control switches.
- (7) Electricity Supply. The electric supply to the fireman's lift/s shall be connected to a sub-circuit of a sub-main which shall be exclusive and independent of any other sub-main circuit. The cables supplying current to lift installation should be located on a route of negligible fire risk and where possible within the lift well.
When a fireman's lift is one of a battery of lifts, the other lifts may be fed from the same supply, provided it is adequate for this purpose, and that arrangements are such that a fault occurring in any other lift or the battery will not affect in any way the operation of the fireman's lift.
- (8) Speed. The speed of the lift should be such that it would reach the top floor of the building in not more than one minute.
- (9) It shall be suitably indicated by the words "FIREMAN'S LIFT" (消防員專用升降機) in English and Chinese.
- (10) Where cargo lifts are used as a Fireman's Lift the doors shall be automatic self-closing, fire resisting and the lift car be contained in a separate fire resisting lift shaft.

- 8.** Where more than one lift is to be provided in a building of over 8 floors or 24 m in height, the Director of Fire Services shall designate which lift/s is/are to be a fireman's lift. Designation of Fireman's Lift.
- 9.** (1) A fire alarm installation not of the automatic type must normally consist of a push button or break glass system so installed that each floor of the building is provided with one or more actuation points and bells to the requirements of the Director of Fire Services, and they must be so wired that the operation of any one actuation point will normally operate all the alarm bells in the building for the purpose of giving alarm of fire to the occupants and should continue to ring until manually silenced. System for fire alarm installation & wiring thereof.
- (2) The alarm bells circuit shall be so arranged that a short circuit or disconnection at a single point in the wiring does not result in the silencing of all alarm bells on any one floor in the building.
- 10.** The Director of Fire Services in any particular case may require a fire alarm installation of the automatic type to be provided or also a non-automatic type to be provided with an annunciator board to indicate the location of the actuation point which has been operated. The Director of Fire Services may also require, in the case of multi-storey developments having fixed installations, the provision of a Fire Control Room. Such room shall be situated on the ground floor adjacent to the Main Entrance and shall contain the annunciator boards, controls, terminals etc. of the fire protection installations within that building. The Director may further require in the case of high fire or life risk premises that such rooms be continuously manned by suitably trained personnel. Annunciator boards etc.
- 11.** Except where the Director of Fire Services in any particular case specifies otherwise, the means of operating fire alarms shall be interconnected with the means of operating fixed fire pumps of fire hydrant/hose reel installations. Inter-connections.
- 12.** (1) Every building in which the provision of a fireman's lift is required shall also be provided with suitable wiring to enable the Fire Services Department to connect and use hand telephone apparatus in conjunction with such wiring. Communication wiring and outlets.
- (2) The wiring shall be affixed inside the lift shaft and shall be fire-resisting.
- (3) Every floor including the ground floor shall be provided with a suitable telephone type jack-socket outlet on the external face of the lift shaft.
- 13.** (1) The fire service installations specified in sub-paragraphs (1), (2), (3), (4), (6), (7), and (8) of paragraph 2 shall be in accordance with the specifications respectively laid down in Part III. Requirements as to specification.

(2) All materials and fittings used in any fire service installation shall be in accordance with the current British Standard Specifications for such materials and fittings.

Electrical
supplies.

14. (1) Where an electrical installation is required to comply with this Code, a primary and secondary source of supply shall be provided to the satisfaction of the Director of Fire Services and all electrical devices shall be fed from both the primary and secondary source of supply.

(2) Where the secondary source of supply is in the form of a fixed, independently powered emergency electrical generator it shall be of sufficient electrical capacity to meet essential services, including one fireman's lift.

(3) Emergency electrical generators will be required to be provided for:—

(i) All industrial and commercial buildings of over 8 floors or 24 m in height.

(ii) All composite buildings where the commercial portion of such composite building exceeds 8 floors or 24 m in height.

(iii) All other buildings where large compartment volumes or other special hazard considerations so dictate, irrespective of building height, as considered necessary by the Director of Fire Services.

(4) Emergency electrical generators are strongly recommended to be provided in all domestic buildings of over 8 floors or 24 m in height.

(5) Emergency electrical generators provided to buildings form part of the fire service installation and will therefore be subject to the provisions of the Fire Service (Installation and Equipment) Regulations and the Fire Service (Installation Contractors) Regulations Cap. 95, Laws of Hong Kong.

PART III

SPECIFICATION

Fire hydrant/hose reel installations

Siting of
hydrants.

15. Each hydrant outlet shall be prominently sited in an approach lobby to a staircase or in the staircase enclosure. It should preferably be recessed into a wall which is not a staircase enclosing wall or smoke lobby wall. When recessed there shall be an all round clearance between any part of the hydrant outlet and valve and the enclosing walls sufficient to permit the free use of the hydrant, the fitting of an adaptor, and the employment of hose spanners. When not recessed the hydrant shall be adequately defended against damage.

16. No hydrant outlet shall be less than 800 mm nor more than 1 200 mm above floor level. Height of hydrant outlet.
17. (1) The hydrant shall not obstruct wholly, partly or indirectly, any door opening, or the required width of any exit route. Obstructing hydrants.
- (2) The hydrant shall be so sited as not to be concealed by the leaves of an adjacent door when that door is opened.
18. Hydrant outlets shall be of non-corrosive metal. The outlets of all hydrants shall be of 70 mm standard Hong Kong Fire Services Department round thread or a standard 63.5 mm instantaneous outlet and each outlet shall be controlled by a wheel operated screw valve designed to open by counter-clockwise rotation. The direction of opening of the valve shall be clearly engraved in both English and Chinese on the wheel of the valve. Hydrant outlets.
19. The hose reel shall be located outside any smoke lobby or staircase enclosure to enable the occupants of the buildings to attack a fire. The hose reel shall be supplied by metal piping from the charged side of the hydrant supply main and a simple on-off control valve shall be provided in this piping by the hose reel. The discharge nozzle shall not be fixed more than 1 350 mm above floor level. Location etc. of hose reel.
20. (1) The tubing of every hose reel must be capable of being readily wound round a drum of 180 mm diameter without kinking, must not kink when led around sharp obstructions, and shall be capable when fitted with branch pipe and nozzle, of projecting a jet not less than 6 m in length. Hose reel tubing.
- (2) The tubing of every hose reel shall have a bursting pressure of not less than 2 700 kPa and shall not be porous nor exhibit any signs of percolation below 2 000 kPa.
21. The hose reel branch nozzle shall have a 4.5 mm orifice and be fitted with a simple two way valve to open or shut off jet; the valve must not be spring loaded. Hose reel branch.
22. The design of the hose reel shall be such that the tubing is permanently connected, via pipes in the drum of the hose reel and such stuffing boxes as may be necessary, to the hydrant supply main. Design of hose reel.
23. Any hose reel sited in any Exit way shall be carried on a swinging cradle so recessed into the wall that when not in use the outer face of the reel is flush with the wall and when required for use the cradle may swing out into the corridor or passage, without undue obstruction and without serious interference with any exit point. Hose reels in Exit ways.

Water supplies to fire hydrant/hose reel installation.

24. (1) The reserve water supply for fire fighting shall be contained in a supply tank.

(2) Supply tanks shall be fed from such source of supply as the Water Authority and the Director of Fire Services may approve.

(3) Where the installation of a supply tank is impracticable or undesirable then an alternative supply may be provided subject to the approval of the Director of Fire Services.

Siting of tanks.

25. It is preferable to site supply tanks at roof level.

Provision of fixed fire pumps.

26. Fire pumps provided shall be permanently primed.

Wet rising main.

27. The water supplied through the fixed fire pump shall feed a wet rising main to all fire hydrants and hose reels.

Inlet of wet rising mains.

28. The wet rising main must be provided with a standard Fire Service Inlet at ground floor level. Where the pump is interposed between the Fire Service Inlet and the hydrant delivery valves, provision must be made for the water supplied to the Inlet to by-pass the fire pump in the event of failure of the pump.

Air valves.

29. All wet rising and downcoming mains shall be fitted with suitable air relief valves to prevent airlocks in the installation.

Specification respecting tanks.

30. (1) The quantity of water specified need not necessarily be contained in one tank provided that where more than one tank is installed the tanks shall be so inter-connected that all the water will flow by gravity to the downcoming main.

(2) The connection between the base of the tank and the downcoming main to the fixed fire pump must be provided with a non-ferrous non-return valve and a non-ferrous filter having a mesh of not less than minimum 2×2 mm mesh.

Starting & motivation of fixed fire pumps.

31. (1) The pump should preferably be electrically driven but, whatever mode of power for driving the pump is employed, means shall be provided for starting the pump by electric remote control button. Where the motive power for any pump is not electricity, alternative means of starting the pump motor manually, in addition to remote control buttons, shall be provided and directions for so starting prominently displayed in the pump house. Remote starting points shall be wired solely for starting the pump and operating the manual alarm system. Means of stopping the pump shall be by switches of the press button type which re-set the remote control start switches. The inclusion of flow switches on the pipe lines is acceptable as an addition to push button type switches, so that the pump will start on flow and stop when the flow ceases.

(2) Where fixed fire pumps other than the pump fed direct by the supply tank are provided in wet rising mains, suitable stop/start switches shall be provided to enable the Fire Services to exercise control of such booster pumps independently of the switches required by sub-paragraph (1). Such switches must be situated at or near the Fire Services Department Inlet and clearly indicated.

32. Remote control buttons for fixed fire pumps shall be sited near the hose reel. Starter buttons shall be enclosed in an independent glass fronted cabinet and must be clearly marked in English and Chinese characters "FIRE PUMP STARTER" (救火泵發動掣).

Remote control buttons for fixed fire pumps.

33. All fixed fire pumps shall be housed in suitable enclosures, preferably brick or concrete, designed solely for occupation by the pump. Such pump houses shall lie clear of any exit or normal communication routes through the premises and shall be clearly marked in English and Chinese characters "FIXED FIRE PUMP" (固定救火泵).

Housing of fixed fire pumps.

34. (1) Each wet rising main shall be connected to an independent Fire Service Inlet.

Fire service inlets.

(2) Each fire service inlet shall be located in a prominent position on the exterior of the building, suitably recessed and may be enclosed by glazing. The function of the inlet i.e.

(a) Fire Service Inlet (消防入水掣).

OR

(b) Sprinkler Inlet (花灑入水掣).

OR

(c) Drencher Inlet (水簾入水掣).

OR

(d) Foam-water Spray Inlet (消防泡沫入水掣).

OR

(e) Water Spray Inlet (噴水器入水掣).

shall be indicated on a metal plate in both English and Chinese characters, using raised lettering, and fixed to the wall immediately behind the inlet(s) as appropriate. When glazing is employed to enclose the inlet recess box, the indication of the function of the inlet must also be clearly marked and visible in both English and Chinese characters on the glazing.

(3) The inlet couplings shall be not less than 600 mm nor more than 1 000 mm above the ground level and shall be of a standard pattern approved by the Fire Services.

(4) There shall be a non-return valve behind each inlet to prevent "back flow" of water.

(5) The fire service inlet shall be so situated as to be within easy reach of a fire appliance parked in a thoroughfare adjacent to the building protected.

34A. (i) The internal diameter of the rising main shall, in the case of industrial buildings be not less than 100 mm. Each rising main shall supply two hydrant outlets per floor.

(ii) The internal diameter of rising mains in all other types of buildings shall normally be not less than 80 mm and each rising main shall supply one hydrant outlet per floor.

(iii) The Director of Fire Services may require the rising main specification contained in Para. 34A (i) to be provided in buildings other than industrial when in his opinion the risk so justifies such provision.

Dry riser installations

Specifica-
tions
respecting
dry riser
installations.

35. (1) The number and position of hydrant outlets shall be as specified by the Director of Fire Services.

(2) Hydrant outlets shall be fitted with a suitable locking device to prevent unauthorized opening of the valve.

(3) No equipment should be provided at hydrant points other than a blank cap which shall be kept connected to the outlet and shall be held captive by a suitable chain to discourage theft.

(4) Dry rising mains should be normally sited either within a ventilated lobby of a staircase lobby approach or, where this is not practicable, in the staircase enclosure.

(5) Where only one outlet per floor is specified the internal diameter of the riser shall be not less than 80 mm. Where two or more outlets per floor are specified and are supplied from one dry riser the internal diameter of the riser shall be not less than 100 mm.

(6) The riser shall be provided with a standard pattern inlet fitted with non-return valves and approved by the Fire Services.

(7) The dry rising mains shall be effectively electrically earthed.

(8) All dry rising mains shall be fitted with suitable air relief valves to prevent air locks.

Sprinkler Installations

36. (1) Sprinkler installations shall be installed in accordance with the Rules of the Fire Offices' Committee for Automatic Sprinkler Installations with the exception that the Rules governing "Water Supplies" and "Town's Water", (29th Edition) shall be replaced by paragraph 37 of this Code. Installations.

(2) Any reference in the aforesaid Rules to electrical installations shall be subject to the provisions of paragraph 14 of this Code.

37. Sprinkler installations shall be provided with two separate and adequate sources of water supply always available. Water supply for sprinkler installations.

The following are accepted sources of water supply:--

- (a) Town's main.
- (b) Elevated tank.
- (c) Pressure tank.
- (d) Pump.
- (e) Elevated private reservoir.
- (f) Salt water mains, as approved.

Note 1: An elevated private reservoir shall have a capacity of about 1 000 000 L (1 000 m³) if proposed as a substitute for town's main, but reservoirs of somewhat less capacity may possibly be approved if the conditions are exceptionally favourable.

Note 2: The normal accepted sources of water supply will be an elevated tank and town's mains, including approved salt water mains.

Automatic Smoke and/or Heat Detection System

38. (1) Automatic smoke and/or heat detection system shall be installed in accordance with the Fire Offices' Committee Rules (11th Edition) for Automatic Fire Alarm Installations. Installations.

(2) Any reference in the aforesaid Rules to electrical installations shall be subject to the provisions of paragraph 14 of this Code.

(3) The system shall be linked to the appropriate Fire Services Fire Control by direct telephone lines.

Drencher Installations

39. Drencher Installations shall be installed in accordance with the Rules of the Fire Offices' Committee (Foreign) for the Installation of External Drenchers, Fourth Edition.

Fixed Installations

40. Fixed Installations shall be installed in accordance with the requirements of the Director of Fire Services having regard to the risk to be protected.

Hand Appliances and other Preventive Media

Equipment to be approved. 41. Any hand appliances or other preventive media must be of a type approved by the Director of Fire Services.

PART IV

MISCELLANEOUS

Inspection and testing. 42. The inspection and testing of fire service installations and equipment is dealt with in a separate Code called the Code of Practice (Inspection and Testing of Installations and Equipment) published by the Director of Fire Services.

Director of Fire Services may vary requirements of Code in particular cases. 43. For the avoidance of doubt it is hereby declared that the Director of Fire Services may, in the case of any particular building, vary any of the requirements of this Code (whether by requiring the provision of any fire services installation or equipment not indicated in this Code either in addition to or in substitution for any installation or equipment so indicated or by relaxing any of the requirements in this Code or otherwise) where, in his opinion, such a variation is required in order to ensure the provision of all such fire service installations and equipment as, having regard to the purpose for which the building is intended to be put, comprise the minimum fire service installations and equipment necessary for that building, or, as the case may be, where such a variation is not inconsistent with the provision for the building of all such fire service installations and equipment as aforesaid.

F. M. WATSON,
Director of Fire Services.

FIRE SERVICES DEPARTMENT HEADQUARTERS,

August 1982.

CODE OF PRACTICE

**(INSPECTION AND TESTING OF INSTALLATIONS
AND EQUIPMENT)**

BUILDINGS ORDINANCE, CHAPTER 123

CODE OF PRACTICE (INSPECTION AND TESTING OF
INSTALLATIONS AND EQUIPMENT)

PRELIMINARY NOTE

Where the plans of a building have been certified by the Director of Fire Services under s. 16B(1)(b)(ii) of the Buildings Ordinance as showing all such fire service installations and equipment as in his opinion, having regard to the purpose to which the building is intended to be put, comprise the minimum fire service installations and equipment necessary for such building, the Building Authority may, under s. 21(6)(d) of that Ordinance, refuse to issue a temporary occupation permit or an occupation permit (which is necessary before the building can be occupied in any way except by not more than two caretakers) unless the applicant for the permit produces a certificate from the Director of Fire Services certifying that he is satisfied that the fire service installations and equipment shown on the plans have been provided and are in efficient working order and satisfactory condition.

This Code of Practice (Inspection and Testing of Installations and Equipment) is published for information only, to indicate the type and nature of inspections and tests which installations and equipment must normally pass in order so to satisfy the Director of Fire Services, and to give guidance as to the conduct of inspections and tests. It does not lay down any hard and fast rules. Special factors and circumstances may require variations in respect of any particular building, and in particular case the Director may require additional inspections or tests before he is so satisfied.

CODE OF PRACTICE (INSPECTION AND TESTING OF
INSTALLATIONS AND EQUIPMENT)

PART I

GENERAL

1. Inspections and testing shall be carried out by a Fire Services Inspecting Officer by arrangement with the Authorised Person and the Fire Service Installation Contractor. Inspection and testing by officer of Fire Services Department.
2. Applications for initial inspection and testing should be made on the prescribed form to the Director of Fire Services. The form must be signed by both the Fire Service Installation Contractor and the Authorised Person. Application for inspection and testing.

- Application to be submitted by Authorised Person.
3. Applications should only be submitted by the Authorised Person when the installation and equipment has been installed, completed, and certified as being in efficient working order by the Fire Service Installation Contractor.
- Date and time of inspection and testing to be confirmed by telephone and Authorised Person should attend.
4. Upon receipt of an application the Fire Services Inspecting Officer will contact the Authorised Person (Not the Fire Service Installation Contractor) at the telephone number shown on the prescribed form, and arrange a mutually convenient inspection date. The Authorised Person, as the co-ordinator of the project, should attend the inspection and it is also his responsibility to contact and inform the Fire Service Installation Contractor of the arrangements made.
- Recording result of inspection.
5. A further prescribed form will be used to record the result of the inspection and will be completed and signed on site by the Fire Services Inspecting Officer. The Authorised Person and the Contractor will also be required to sign this form confirming that the results of the inspection have been brought to their attention.
- Inspection and testing after further work.
6. In respect of minor items requiring a further inspection the Authorised Person will, after the defects have been rectified, arrange a re-inspection date with the Assistant Divisional Officer, Fire Service Installations Division. A further formal application for inspection on the prescribed form will only be required when a refusal letter has been issued subsequent to an inspection.
- Re-inspection subject to availability of Inspecting Officers.
7. Re-inspections will be carried out as convenient, subject only to the availability of Inspecting Officers and provided that previous confirmed appointments are not affected.
- Issuance of Certificate.
8. Subsequent to a satisfactory inspection, the Authorised Person will be notified by telephone as soon as the Fire Service Certificate (FS 172) is ready for collection. If unable to be contacted by telephone a "ready for collection" letter will be despatched.
- Certificate of Completion by Waterworks Office sent direct to Building Ordinance Office.
9. The Certificate of Completion by Waterworks Office in respect of Fire Service Installations requiring Government water mains connection will be sent direct to the Building Ordinance Office by the Waterworks Office, copied to the applicant, after the installation has been inspected and approved by the Waterworks Inspectorate and the fire service connection completed.

PART II

INSPECTIONS AND TESTS

- Hose reel tubing.
10. (1) The tubing of every hose reel must be capable of being readily wound round a drum of 180 mm diameter without kinking, must

not kink when led around sharp obstructions, and shall be capable when fitted with branch pipe and nozzle, of projecting a jet not less than 6 m in length.

(2) The tubing of every hose reel shall have a bursting pressure of not less than 2 700 kPa and shall not be porous nor exhibit any signs of percolation below 2 000 kPa.

11. The hose reel branch nozzle shall have a 4.5 mm orifice and be fitted with a simple two way valve to open or shut off jet; the valve must not be spring loaded. Hose reel branch.

12. The design of the hose reel shall be such that the tubing is permanently connected, via pipes in the drum of the hose reel and such stuffing boxes as may be necessary, to the hydrant supply main. Design of hose reel.

13. The testing of sprinkler installations will be carried out according to the tests specified from time to time by the Fire Offices' Committee. Testing of sprinkler installations.

14. The testing of drencher and fixed installations will be carried out according to such tests as the Director of Fire Services may require having regard to the nature and purpose of the installation. Testing of drencher and fixed installations.

15. The tests for fire hydrant/hose reel installations shall consist of— Testing of fire hydrant, hose reel installations.

- (1) visual examination of installation;
- (2) test of water tightness to a maximum of 1 700 kPa static pressure;
- (3) a capacity and pressure test;
- (4) the "static" pressure, without pump, at the topmost hydrant will be taken;
- (5) a flow meter and pressure gauge will then be fitted to the hydrant the fixed fire pump or pumps started, and readings taken;
- (6) a practical charging and supply of water through the wet rising main via the fire service inlet.

16. The tests for dry riser installations shall consist of— Testing of dry riser installations.

- (1) a visual examination of the fittings and piping and their location;
- (2) a practical charging of the rising main to show that the system can be easily charged via the fire service inlet within a reasonable time having regard to the size of the installation and with particular attention to the efficiency of air relief valves;
- (3) the installation must prove clear of percolation and leakage for 10 minutes after being charged with water.

Testing
of hand
appliances.
etc.

17. The tests for hand appliances and other preventive media shall be in accordance with the tests specified by the Director of Fire Services from time to time. Pamphlets describing testing procedure can be obtained from the Director of Fire Services.

PART III

MISCELLANEOUS

Code of
Practice
(Minimum
Fire Service
Installations
and
Equipment).

18. This Code deals only with the inspection and testing of fire service installations and equipment after the same have been provided for a building. The general requirements as to what installations and equipment are to be provided in buildings are dealt with in another Code called the Code of Practice (Minimum Fire Service Installations and Equipment), published by the Director of Fire Services.

Director of
Fire Services
may vary
requirement
of Code in
particular
cases.

19. For the avoidance of doubt it is hereby declared that the Director of Fire Services, in his absolute discretion, may, in any particular case, vary any of the requirements of this Code and in particular may require different inspections or tests in regard to any installation or equipment than the inspections or tests indicated in this Code, either in addition to or in substitution for the inspections and tests so indicated.

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APPENDIX 1

CODES OF PRACTICE

TABLE OF CONCORDANCE

<i>Reference</i>	<i>Metric Expression</i>	<i>Acceptable non-metric equivalent</i>
2.(1)	70 mm	2 $\frac{3}{4}$ " (coupling)
3.(6)	9 L	2-gallon
3.(6)(b)(i)	2 kg	5-lb
3.(6)(b)(ii)	1.3 kg 1 L	3-lb one quart
3.(6)(b)(iii)	3 kg	7-lb
3.(6)(b)(iv)	4.5 L	1-gallon
3.(6)(c)	6 kg	15-lb
	9 kg	20-lb
	9 L	two gallons
	18 L	four gallons
	6 kg	15-lbs
	9 L	2-gallon
	70 mm	2 $\frac{3}{4}$ " (coupling)